

HAWAII, ISLAND OF HAWAII

16758000 WAIKOLOA STREAM AT MARINE DAM, NEAR KAMUELA

LOCATION.--Lat 20° 02'48", long 155° 39'58", Old Hawaiian Datum, Hydrologic Unit 20010000, on right bank 160 ft upstream from Marine Dam, 0.4 mi east of Puu Ohu, and 1.6 mi north of Kamuela.

DRAINAGE AREA.--1.18 mi².

PERIOD OF RECORD.--May 1947 to current year.

REVISED RECORDS.--WSP 1569: Drainage area. WSP 1937: 1948(M), 1949-51(P), 1952(M), 1954(M), 1955, 1956-57(P), 1958-60.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 3,460 ft above mean sea level (from topographic map).

REMARKS.--Records computed by Dale Nishimoto. Records good except for estimated period which is fair. Parker Ranch diverts less than 1 ft³/s through a 6-in. pipe upstream of gage.

AVERAGE DISCHARGE.--56 years (water years 1948-2003), 9.32 ft³/s (6,750 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,410 ft³/s, November 18, 1979, gage height, 6.84 ft, from rating curve extended above 120 ft³/s on the basis of computations of flow over dam at gage heights 5.46 ft and 5.96 ft; minimum, 0.34 ft³/s, June 5-6, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 180 ft³/s and maximum (*):

Date	Time	Discharge	Gage height	Date	Time	Discharge	Gage height
		(ft ³ /s)	(ft)			(ft ³ /s)	(ft)
Feb 21	1245	*408	*4.04	Sep 1	0345	226	3.50

Minimum discharge, 0.81 ft³/s, Feb. 9, 10, gage height, 1.37 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	2.4	2.1	1.7	1.2	6.4	2.2	2.2	1.7	e13	6.4	118
2	2.2	2.2	1.6	1.6	1.3	4.5	2.6	1.9	1.6	e13	5.7	21
3	1.9	1.9	4.5	1.5	1.2	3.5	2.0	1.9	1.6	e8.5	6.7	7.9
4	1.9	1.8	20	1.5	1.1	2.9	1.7	1.9	1.5	e7.6	3.9	6.3
5	7.7	2.0	4.4	1.5	1.0	2.4	1.4	1.8	1.5	e4.7	25	6.5
6	9.7	1.7	2.5	1.4	1.0	2.2	1.2	1.7	1.5	e5.0	10	10
7	5.0	1.6	38	1.4	1.0	2.1	1.2	1.6	1.5	e20	6.2	10
8	3.4	1.5	11	1.4	0.97	1.9	1.2	1.7	1.4	21	4.6	5.5
9	2.8	1.6	4.0	1.1	0.96	3.6	1.4	3.6	1.3	58	11	4.2
10	4.2	1.6	31	1.2	0.95	2.8	1.5	18	1.3	19	18	3.7
11	3.6	1.5	11	1.7	1.1	2.2	1.5	9.3	1.4	12	7.9	3.3
12	6.0	1.4	4.2	3.6	1.3	1.9	1.5	7.9	11	52	5.9	2.9
13	4.0	1.5	2.8	2.7	1.1	1.8	5.1	9.6	11	39	26	4.7
14	2.8	1.4	2.3	1.8	25	1.7	3.6	10	3.8	11	21	5.9
15	2.9	2.0	2.0	6.3	53	1.6	2.5	13	3.2	18	15	5.5
16	2.9	3.6	1.9	8.0	13	1.5	6.5	4.8	5.1	13	13	3.8
17	2.6	2.3	1.8	2.6	4.4	1.5	5.9	13	7.6	6.6	7.6	3.0
18	2.4	1.8	1.7	1.7	4.1	1.5	6.1	8.5	26	4.8	6.3	2.6
19	2.1	1.5	1.7	1.6	10	1.5	3.8	8.5	20	15	6.8	2.3
20	2.0	1.4	1.6	28	13	1.5	16	24	12	17	7.0	2.2
21	1.9	1.5	1.4	6.9	69	1.4	9.9	5.6	9.5	12	7.1	2.1
22	1.9	1.3	1.8	2.9	9.6	1.7	24	7.8	7.0	5.9	6.4	2.0
23	2.1	1.3	4.3	2.1	9.2	2.1	17	16	4.6	4.4	7.6	1.9
24	2.3	1.2	5.0	1.9	19	1.8	12	9.9	e11	4.0	9.8	1.8
25	2.4	1.3	3.5	1.9	5.7	1.6	11	7.6	e24	5.0	4.9	1.7
26	2.2	1.3	2.5	1.9	5.3	1.5	15	3.5	e7.4	3.8	4.3	1.7
27	1.9	1.2	5.0	1.6	5.3	1.4	15	2.7	e4.4	3.2	9.7	1.7
28	1.8	1.2	4.3	1.3	23	1.6	4.6	2.2	e3.6	2.8	8.7	1.6
29	1.9	2.8	2.8	1.3	---	3.5	3.1	1.9	e3.2	2.8	5.7	1.5
30	2.1	4.1	2.3	1.3	---	3.9	2.6	1.8	e10	3.7	14	1.5
31	2.2	---	1.9	1.3	---	2.4	---	1.8	---	3.9	27	---
TOTAL	95.0	53.9	184.9	96.7	282.78	71.9	183.1	205.7	200.7	409.7	319.2	246.8
MEAN	3.06	1.80	5.96	3.12	10.1	2.32	6.10	6.64	6.69	13.2	10.3	8.23
MAX	9.7	4.1	38	28	69	6.4	24	24	26	58	27	118
MIN	1.8	1.2	1.4	1.1	0.95	1.4	1.2	1.6	1.3	2.8	3.9	1.5
AC-FT	188	107	367	192	561	143	363	408	398	813	633	490

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2003, BY WATER YEAR (WY)

MEAN	6.13	8.83	9.64	8.44	7.88	10.5	12.6	8.98	8.93	12.1	11.3	6.09
(WY)	(1984)	(1980)	(1958)	(1979)	(1960)	(1980)	(1986)	(1998)	(1998)	(2002)	(1958)	(1992)
MAX	18.2	43.7	31.4	38.7	23.0	52.1	43.4	22.1	28.4	26.9	33.6	24.9
(WY)	(1997)	(1963)	(1996)	(1953)	(1954)	(1983)	(1992)	(1999)	(1962)	(1961)	(1973)	(1965)
MIN	0.98	1.42	1.47	1.46	1.31	2.11	1.53	1.95	2.68	3.08	2.27	0.91

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SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1947 - 2003
ANNUAL TOTAL	3,720.4	2,350.38	
ANNUAL MEAN	10.2	6.44	
HIGHEST ANNUAL MEAN			9.32
LOWEST ANNUAL MEAN			17.8
HIGHEST DAILY MEAN	225	Feb 26	4.49
LOWEST DAILY MEAN	1.2	Nov 24	1980
ANNUAL SEVEN-DAY MINIMUM	1.3	Nov 22	1981
ANNUAL RUNOFF (AC-FT)	7,380	4,660	641 Nov 18, 1979
10 PERCENT EXCEEDS	22	15	0.37 Jun 3, 1992
50 PERCENT EXCEEDS	4.6	2.9	0.42 May 21, 1992
90 PERCENT EXCEEDS	1.9	1.4	6,750 21 4.3 1.8

e Estimated

